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EXAMINER	
JACOBS, LASHONDA T	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,489	LECROY ET AL.	
	Examiner	Art Unit	
	LaShonda T Jacobs	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-152* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-152* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/24/02, 11/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: note reference numeral 10 in Figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: Applicants need to supply the serial number of the co-pending application on page 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **1-4, 39-42, 77-80** and **115-118** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bushmitch (U.S. Pat. No. 5,928,331) in view of Geagan, III et al (hereinafter, "Geagan, III", U.S. Pat. No. 6,263,371).

As per claims **1, 39, 77** and **115**, Bushmitch discloses in a computer network and system having at least one client and at least one server, said client and said server being selectively in communication with each other over said network, said server streaming into said network a plurality of RTP packets addressed for said client at a normal streaming rate commensurate with a rate of reading said packets at said client, each of said RTP packets including at least a sequence number and a timestamp, a reliable RTP method comprising:

- acknowledging to said server each of said packets received by said client (col. 5, lines 47-48; Bushmitch discloses an acknowledgement system to insure that all datagrams (packets) are delivered.); and
- re-transmitting from said server to said client any of said packets that remain unacknowledged subsequent to expiration of a predetermined time duration subsequent to said timestamp (col. 5, lines 49-61; Bushmitch discloses retransmitting packets that have not been acknowledged by the system).

However, Bushmitch does not explicitly disclose:

- continuously determining a maximum number of bytes that may be contained in said RTP packets streaming into said network and, in the event a number of bytes in said RTP packets exceeds said maximum number, discontinuing streaming of said RTP

packets until said determining step indicates said number of bytes is less than said maximum number; and

- continuously determining a present streaming rate at which said RTP packets are streamed into said network wherein said present streaming rate exceeds said normal streaming rate.

Geagan III, discloses a method and apparatus for seaming of streaming content comprising:

- continuously determining a maximum number of bytes that may be contained in said RTP packets streaming into said network and, in the event a number of bytes in said RTP packets exceeds said maximum number, discontinuing streaming of said RTP packets until said determining step indicates said number of bytes is less than said maximum number (col. 11, lines 1-23; Geagan, III discloses monitoring the sequence numbers of the packets to retrieve the number of bytes within the packet); and
- continuously determining a present streaming rate at which said RTP packets are streamed into said network wherein said present streaming rate exceeds said normal streaming rate (col. 12, lines 41-60; Geagan, III discloses a sequencer for collecting and transmitting packets out of the buffer at a stream rate optimized for the receiving client under the control of the sequencer).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Geagan, III teachings of a method and apparatus for seaming of streaming content with Bushmitch for the purpose of allowing provision of one or more output data streams to one or more content consumers that include fewer missing packets than any individual one of the data streams being received [Geagan, III Col. 7, lines 26-39].

Thus, Bushmitch provides the motivation to combine by utilizing a media delivery system to control the flow of streams in order to prevent or reduce network congestion once it is detected [see Bushmitch, Col. 9, lines 4-10].

As per claims **2**, **40**, **78** and **116**, Bushmitch discloses:

- wherein said acknowledging includes sending from said client to said server of plurality of ACK packets in response to receiving said RTP packets (col. 5, lines 47-48; Bushmitch discloses an acknowledgement system to insure that all datagrams (packets) are delivered.).

As per claims **3**, **41**, **79** and **117**, Bushmitch discloses the invention substantially as claims discussed above.

However, Bushmitch does not explicitly disclose:

- wherein said sending step includes inserting into each of said ACK packets said sequence number of at least a respective one of said RTP packets received at said client.

Geagan III, discloses a method and apparatus for seaming of streaming content comprising:

- wherein said sending step includes inserting into each of said ACK packets said sequence number of at least a respective one of said RTP packets received at said client (col. 11, lines 1-23; Geagan, III discloses monitoring the sequence numbers of the packets to retrieve the number of bytes within the packet).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Geagan, III teachings of a method and apparatus for seaming of streaming content with Bushmitch for the purpose of allowing provision of one or more output data streams to one or more content consumers that include fewer missing packets

than any individual one of the data streams being received [Geagan, III Col. 7, lines 26-39]. Thus, Bushmitch provides the motivation to combine by utilizing a media delivery system to control the flow of streams in order to prevent or reduce network congestion once it is detected [see Bushmitch, Col. 9, lines 4-10].

As per claims **4**, **42**, **80** and **118**, Bushmitch discloses the invention substantially as claims discussed above.

However, Bushmitch does not explicitly disclose:

- wherein said inserting step further includes inserting a bit mask representing an offset from said sequence number into each of ACK packets.

Geagan III, discloses a method and apparatus for seaming of streaming content comprising:

- wherein said inserting step further includes inserting a bit mask representing an offset from said sequence number into each of ACK packets (col. 11, lines 1-23; Geagan, III discloses monitoring the sequence numbers of the packets to retrieve the number of bytes within the packet).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Geagan, III teachings of a method and apparatus for seaming of streaming content with Bushmitch for the purpose of allowing provision of one or more output data streams to one or more content consumers that include fewer missing packets than any individual one of the data streams being received [Geagan, III Col. 7, lines 26-39]. Thus, Bushmitch provides the motivation to combine by utilizing a media delivery system to control the flow of streams in order to prevent or reduce network congestion once it is detected [see Bushmitch, Col. 9, lines 4-10].

5. Claims **5-17**, **43-55**, **81-93** and **119-131** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bushmitch in view of Geagan, III and in further view of Chen (U.S. Pub. No. 2002/0167948).

As per claims **5**, **43**, **81** and **119**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- computing said predetermined time duration as an estimated round-trip time.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- computing said predetermined time duration as an estimated round-trip time (paragraph 0027).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **6**, **44**, **82** and **120**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose wherein said computing step includes:

- measuring a time period from transmission of each one of said RTP packets streamed by said server to receipt by said server of said ACK packets acknowledging each respective one of said RTP packets.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- measuring a time period from transmission of each one of said RTP packets streamed by said server to receipt by said server of said ACK packets acknowledging each respective one of said RTP packets (paragraph 0028).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims 7, **45**, **83** and **121**, Bushmitch discloses wherein said measuring step includes:

- marking a time of transmission for each one of said RTP packets streamed from said server (col. 7, lines 55-64); and
- marking a time of receipt for said ACK packets acknowledging each respective one of said RTP packets (col. 7, lines 55-64).

However, Bushmitch does not explicitly disclose:

- calculating as a function of said time of transmission and said time of receipt said estimated round-trip time.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- calculating as a function of said time of transmission and said time of receipt said estimated round-trip time (paragraph 0027).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **8**, **46**, **84** and **122**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- wherein said calculating step utilizes Karn's algorithm.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- wherein said calculating step utilizes Karn's algorithm (paragraph 0054).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of Karn's algorithm to estimate round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **9**, **47**, **85** and **123**, Bushmitch discloses wherein said computing step includes:

- ignoring said tine period for any one of said RTP packets having been re-transmitted prior to receipt of by said server of one of said ACK packets acknowledging said any one of said RTP packets (col. 5, lines 55-65).

As per claims **10**, **48**, **86** and **124**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- initializing a minimum round-trip threshold.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- initializing a minimum round-trip threshold (paragraph 0029).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **11**, **49**, **87** and **125**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- resetting said minimum round-trip threshold to said estimated round-trip time in the event said estimated round-trip time is less than said minimum round-trip threshold.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- resetting said minimum round-trip threshold to said estimated round-trip time in the event said estimated round-trip time is less than said minimum round-trip threshold (paragraph 0028).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **12**, **50**, **88** and **126**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose

- initializing a maximum round-trip threshold.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- initializing a maximum round-trip threshold (paragraph 0029).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **13**, **51**, **89** and **127**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- resetting said maximum round-trip threshold to said estimated round-trip time in the event said estimated round-trip time is greater than said maximum round-trip threshold.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- resetting said maximum round-trip threshold to said estimated round-trip time in the event said estimated round-trip time is greater than said maximum round-trip threshold (paragraph 0028).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **14**, **52**, **90** and **128**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- wherein said initializing step includes initializing said maximum round-trip threshold equal to an initial minimum round-trip threshold.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- wherein said initializing step includes initializing said maximum round-trip threshold equal to an initial minimum round-trip threshold (paragraph 0029).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **15**, **53**, **91** and **129**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- increasing said estimated round-trip time upon all occurrence of said re-transmitting step.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- increasing said estimated round-trip time upon all occurrence of said re-transmitting step (paragraph 0028).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **16**, **54**, **92** and **130**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose wherein said increasing step includes:

- multiplying said estimated round-trip time by a predetermined coefficient.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- multiplying said estimated round-trip time by a predetermined coefficient (paragraph 0029).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout value according to the round trip time measurements thereby improving the performance in the communication system.

As per claims **17**, **55**, **93** and **131**, Bushmitch in view of Geagan, III discloses the invention substantially as claimed.

However, Bushmitch in view of Geagan, III does not explicitly disclose:

- wherein said predetermined coefficient is equal to 3/2.

Chen discloses a communications system for transmitting segments using sequence numbers comprising:

- wherein said predetermined coefficient is equal to 3/2 (paragraph 0029).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Chen's teachings of estimating a round trip time of packets with the combine system of Bushmitch and Geagan, III to adjust the retransmission timeout

value according to the round trip time measurements thereby improving the performance in the communication system.

6. Claims **18-38**, **56-76**, **94-114** and **132-152** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bushmitch in view of Geagan, III and in further view of Tobagi et al (hereinafter, "Tobagi", U.S. Pub. No. 2002/0080721).

As per claims **18**, **56**, **94** and **132**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said maximum number of bytes determining step includes:

- computing a congestion window size; and
- computing a difference between a number of bytes in said RTP packets currently streamed into said network and a number of bytes in said RTP packets acknowledged by said ACK packets, said maximum number of bytes being a number of bytes by which said congestion window size exceeds said difference.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- computing a congestion window size (paragraph 0009); and
- computing a difference between a number of bytes in said RTP packets currently streamed into said network and a number of bytes in said RTP packets acknowledged by said ACK packets, said maximum number of bytes being a number of bytes by which said congestion window size exceeds said difference (paragraph 0043; Tobagi discloses

calculating the congestion window size based on the TCP packets received at the server).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **19**, **57**, **95** and **133**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said congestion window size computing step includes:

- setting said congestion window size to an initial congestion window size; and
- varying said congestion window size constrained by a maximum congestion window size in response to receiving said ACK packets.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- setting said congestion window size to an initial congestion window size (paragraph 0045); and
- varying said congestion window size constrained by a maximum congestion window size in response to receiving said ACK packets (paragraph 0037).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion

window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **20**, **58**, **96** and **134**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said setting step includes

- computing said initial congestion window size as a selected multiple of a maximum segment size.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- computing said initial congestion window size as a selected multiple of a maximum segment size (paragraph 0009).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **21**, **59**, **97** and **135**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly disclose:

- wherein said selected multiple of said maximum segment size is four.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said selected multiple of said maximum segment size is four (paragraph 0044).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **22**, **60**, **98** and **136**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said varying step includes

- functionally computing said congestion window size as a function of a selected one of a maximum segment size and a number of bytes in each of said RTP packets for which a respective one of said ACK packets has been received.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- functionally computing said congestion window size as a function of a selected one of a maximum segment size and a number of bytes in each of said RTP packets for which a respective one of said ACK packets has been received (paragraph 0043; Tobagi discloses calculating the congestion window size based on the TCP packets received at the server).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **23**, **61**, **99** and **137**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said functionally computing step includes increasing said congestion window size by a number of bytes in each one of said RTP packets for which a respective one of said ACK packets has been received.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said functionally computing step includes increasing said congestion window size by a number of bytes in each one of said RTP packets for which a respective one of said ACK packets has been received (paragraph 0043; Tobagi discloses calculating the congestion window size based on the TCP packets received at the server).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **24**, **62**, **100** and **138**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said increasing step is performed only in the event of said congestion window size is presently below a slow start threshold.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said increasing step is performed only in the event of said congestion window size is presently below a slow start threshold (paragraph 0037).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **25**, **63**, **101** and **139**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said functionally computing step includes increasing said congestion window size for each full window of said ACK packets received.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said functionally computing step includes increasing said congestion window size for each full window of said ACK packets received (paragraph 0045).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **26**, **64**, **102** and **140**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said increasing step is performed only in the event said congestion window size is presently above a slow start threshold.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said increasing step is performed only in the event said congestion window size is presently above a slow start threshold (paragraph 0037).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **27**, **65**, **103** and **141**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said congestion window size computing step further includes resetting said congestion window size to a lesser of one-half of a slow start threshold and one-half of a current congestion window size upon an occurrence of said retransmitting step.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said congestion window size computing step further includes resetting said congestion window size to a lesser of one-half of a slow start threshold and one-half of a current congestion window size upon an occurrence of said retransmitting step (paragraph 0043).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **28**, **66**, **104** and **142**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said varying step includes setting said maximum congestion window size equal to a size of a client window.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said varying step includes setting said maximum congestion window size equal to a size of a client window (paragraph 0043).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **29**, **67**, **105** and **143**, Bushmitch discloses:

- wherein said re-transmitting step includes inserting into each of said RTP packets an expiration time, said any of said packets remaining unacknowledged not being re-transmitted in the event said expiration time is less than said predetermined time duration (col. 5, lines 45-61).

As per claims **30**, **68**, **106** and **144**, Bushmitch discloses:

- wherein said maximum number of bytes determining step includes adding to said maximum number a number of bytes of said any of said RTP packets remaining unacknowledged after expiration of said time duration (col. 5, lines 45-61).

As per claims **31**, **69**, **107** and **145**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said streaming rate determining step includes:

- reporting by said client to said server an overbuffer window size; and
- setting said streaming rate at a rate above said rate of reading wherein said overbuffer window size is transmitted.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- reporting by said client to said server an overbuffer window size (paragraph 0048); and
- setting said streaming rate at a rate above said rate of reading wherein said overbuffer window size is transmitted (paragraph 0039).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **32**, **70**, **108** and **146**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses wherein said reporting step includes:

- inserting into all APP packet said overbuffer window size; and
- sending by said client to said server said APP packet.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- inserting into all APP packet said overbuffer window size (paragraph 0048); and

- sending by said client to said server said APP packet (paragraph 0048).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **33**, **71**, **109** and **147**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said streaming rate determining step further includes discontinuing streaming of said RTP packets when said overbuffer window is full.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said streaming rate determining step further includes discontinuing streaming of said RTP packets when said overbuffer window is full (paragraph 0048).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **34**, **72**, **110** and **148**, Bushmitch further discloses:

- inserting into a setup request first header information communicated to said server by said client to initiate said reliable RTP method (col. 8, lines 37-51); and
- inserting said first header information identically into a setup response to be communicated to said client by said server (col. 8, lines 37-51).

As per claims **35**, **73**, **111** and **149**, Bushmitch discloses:

- wherein said first header information includes a protocol name and at least one parameter following said protocol name (col. 6, lines 17-23).

As per claims **36**, **74**, **112** and **150**, Bushmitch in view of Geagan, III discloses the invention substantially as claims discussed above.

However, Bushmitch in view of Geagan does not explicitly discloses:

- wherein said parameter includes a client window size.

Tobagi discloses a system and method for controlling data transfer rates on a network comprising:

- wherein said parameter includes a client window size (paragraph 0044).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Tobagi teaching's of a calculating a congestion window with the combine system of Bushmitch and Geagan, III in order to control the rate of data transfer by changing the size of the buffer therefore reducing the impact of large transfer of data and lost data packets over the network.

As per claims **37**, **75**, **113** and **151**, Bushmitch further discloses:

- inserting into said setup request second header information indicative of transport options, said second header information being inserted identically into said setup response (col. 6, lines 17-23).

As per claims **38**, **76**, **114** and **152**, Bushmitch discloses:

- wherein one of said options is a late tolerance option (col. 6, lines 17-23).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,643,496 to Shimoyama et al

U.S. Pat. No. 6,735,634 to Geagan, III et al

U.S. Pat. No. 6,741,555 to Li et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaShonda T Jacobs whose telephone number is 571-272-4004. The examiner can normally be reached on 8:30 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 9, 2005

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